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AUTHOR Sanderson, Allen R.
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ABSTRACT

Although the number of foreign students enrolled in economics doctoral programs in the United States has gradually increased, no need exists to modify curricula to meet the needs of these students. During 1981-1982, in 13 of the leading economics programs, foreign students comprised 36 percent of graduate enrollments and 45 percent of applications. However, the question of whether a particular curriculum is a good match with the needs of foreign students is based on inaccurate assumptions. The block of foreign students across graduate economic programs represents more than 100 countries that vary in cultural characteristics, stage of development, and economic orientations. It is difficult to imagine constructing programs that would address separate, national concerns. Also, placement surveys indicate that few United States-trained foreign economists leave the United States, at least initially. For graduates who eventually return home, the degree may serve more as a credential than a research tool. In addition, economics programs present a core of material that is independent of geographic location, industrial structure, and political considerations. Programs are flexible enough to accommodate different tastes and instruction in basic principles, and research techniques are independent of other factors. (Author/KC)

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GRADUATE ECONOMICS CURRICULA AND THE NEEDS OF FOREIGN STUDENTS[1]

Allen R. Sanderson[2]

Introduction

Twenty-five years ago, when the Economics Institute was just getting started, graduate study in economics at Princeton was in the combined Department of Economics and Sociology. There were twenty-seven economics graduate students in the department that year, including William G. Bowen, the University's president since 1972; four (or 15%) of the twenty-seven students were from foreign countries. For purposes of meeting the General Examination requirements, a student needed one statistics course--graduate or undergraduate--and a reading knowledge of French and German. Twenty-four economics courses were listed in the catalog. A combination statistics and econometrics course was taught in alternate years with one in mathematical economics.

By 1959-60 the department had lowered the level of language expertise required, and even hinted that some substitutions for French or German were possible. The Graduate Announcement for that year said, with regard to quantitative skills, that:

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> "Some familiarity with mathematics will be helpful to every Economics student and indispensable to those who plan to specialize in the more theoretical fields. However, this most certainly does not imply that the graduate program in this Department is designed primarily for the mathematically-proficient student. For one thing, there are a number of fields in economics for which training in mathematics is relatively unimportant. Furthermore, students without intense prior mathematical preparation can acquire needed tools during the course of their graduate study."[3]

And in that same year the first course in development (of the Near East) appeared.

As the '60s began, economics and sociology at Princeton were split into two distinct departments, perhaps a portent (or in recognition) of the different directions the two disciplines would pursue in that decade. In the 1961-62 academic year, French or German or another language suited to particular research interests fulfilled one General Examination requirement; proficiency in calculus and matrix algebra met the other (though a second language could substitute for the latter).

By 1964-65 econometrics was taught every year, and seven of the twenty-eight departmental courses were in mathematical economics, statistics, or econometrics. In 1967-68 there were four development courses. By the end of the decade formal macro and micro theory courses were more in evidence.

Eleven years ago (1971-72) there were seven development courses and eight quantitative ones among the department's thirty-eight offerings. A year later Central Planning was added as a General Examination field area but deleted before long. Then, beginning with 1973-74, the number

of development courses gradually declined, with many being either cross-listed with or taught entirely by the Woodrow Wilson School of Public and International Affairs. The appearance of a ninth quantitative class--and the explicit separation of econometrics into "applied" and "theoretical" orientations--occurred five years ago.

Last year there were nine quantitative courses out of thirty-four; the language requirement, which had dwindled to "any foreign language" by 1980-81, was dropped entirely, making Princeton (to our knowledge) the last major economics program in the country to eliminate competency in a foreign language as a Ph.D. prerequisite; and in that same year the 1959-60 wording on quantitative skills was revised significantly for the first time:

> "Knowledge of basic mathematics is crucial for all students of economics. Students should have studied multivariate calculus and matrix algebra before enrolling in the Ph.D. program."[4]

For the current academic year, the Department is offering thirty-three courses, nine of which are in quantitative areas and three in development. There are eighty-nine enrolled students, fifty-three of whom (or 60%--four times the percentage of 1956-57) are from a total of twenty-one foreign countries.

The patterns of graduate economics curricula and enrollments at Princeton over the last twenty-five years reflect national trends: an increased interest in the subject, a very definite shift toward theory and quantification, and a high and rising proportion of non-U.S. citizens among the pool of applicants, students, and advanced degree recipients.

The level and trend--high and rising, respectively--of foreing enrollments at Princeton are consistent with data from the Economic Institute's

Guide to Graduate Study in Economics and Agricultural Economics[5] and from information supplied by individual programs to the author this fall. These characteristics appear even more pronounced at the leading research-doctorate programs in economics (as measured by the American Council of Education's 1970 Roose-Andersen Report, the 1979 Ladd-Lipset survey, or the 1982 Jones-Lindzey assessments). Princeton's foreign enrollment in economics has gone from 41% to 60% in the last four years; at Northwestern the figures are 29% and 46%, respectively; at Cornell, 41% and 51%; 28% and 32% at Stanford; a rather constant 30% at MIT; and from 44% to 48% at Columbia. Information available in the Guide on thirteen of the leading nineteen programs show that for the 1980-81 academic year, foreigners comprised 36% of graduate enrollments and 45% of applications. Given the documented mushrooming of applications from abroad and the lower attrition rates among foreign students than among U.S. students, one would expect a continuing steady upward trend in the percent of foreign students among doctorate recipients over the next few years.

Nationally for 1981, 25% of Ph.D.'s in economics were awarded to non-U.S. citizens with temporary visas, twice the percentage across all doctorate fields; and another 8-9% of new Ph.D. economists last year were non-U.S. citizens with permanent residency status. Economics currently ranks as the third highest field--and has for almost twenty years--behind engineering and agriculture in the percentage of doctorates being awarded to citizens of foreign countries.[6]

In absolute numbers, 938 Ph.D.'s in economics were awarded in 1973, the historical peek year for both economics doctorates and the U.S.

aggregate across all fields; for the last three years the economics figure has hovered around 800. In terms of citizenship, 1972 was the peak year for economics Ph.D.'s awarded to U.S. citizens (667); a significant, though not always steady, erosion has occurred in the last ten years. For foreign students, by contrast, the level has been quite constant (at around 250 per year, 80% of whom have temporary visa status) since 1973.[7] Thus the rising percentage of economics doctorates going to non-U.S. citizens is the result of a rather steady level of foreign degree recipients coupled with a declining figure for U.S. students.

The preceding lenghty historical romp through curricular details and evolutions of enrollment trends and doctorate populations is not without purpose. With foreign applicants and students comprising 25-60% of the "market," depending on the definition of foreign and the set of programs considered, one might ask to what extent this group has influenced (and been influenced by) the structure of graduate economics education, and to what extent our programs and curricula meet the needs of foreign students. Those are precisely the questions under consideration in this paper.

A proper response must include a sense of the importance of and context for foreign students in graduate economics departments in this country. The raw data above fulfill this requirement. But to even ask these questions assumes that somehow there might exist inherent, recognizable differences in the two (i.e., domestic vs. foreign) graduate populations and that these difference could or should result in distinct changes in our curricula, program structures, and/or operations. Is, for example, the geographic area of origin or the type of economy a significant factor

in the determination of what students want to gain from a Ph.D. program in economics or what they could contribute to it? (And, normatively, if such factors are important, should our programs cater to these preferences?) Are there career differences across countries, and do these differences loom large in terms of what students want from their course of study and research? Finally, in what way might responses to these questions turn on the ideological position an individual economist might hold, his or her own feelings about the directions the field has gone during its phenomenal growth over the last twenty years, and/or what one feels the discipline has to offer?

Thus to ask if a particular curriculum is a good match with the wants of foreign students presumes certain things about foreign students and about economics, neither of which do I think is accurate. Jumping ahead for a moment to the conclusions, for this author at least the question of the extent to which we should be concerned with meeting the needs of foreign students is largely a non-issue. First of all, it is not obvious from the data that foreign students in economics constitute a distinct population that could or should translate into significant changes in our curricula or program structures. Secondly, the real science of economics is not, in my opinion, economy-specific. For both reasons (see elaborations below), when properly formulated and defined, the problem may disappear similar to Alice's Cheshire Cat. There may well be, and indeed I think there are, serious shortcomings with the way we train economists in this country, but those issues (a) transcend the field itself and (b) are largely independent of the foreign-student question.

The sections below consider these issues in turn. Two caveats are in order at this point, however. First, no attempt has been made to include agricultural economics, business, or M.A. economics programs; the emphasis is squarely on Ph.D. programs in economics. Secondly, the disproportionate use of information from Princeton and from a few selected graduate departments across the country is in no way meant to be myopic or provincial; the data set stems from expediency coupled with the belief that possible distortions do not significantly affect the basic conclusions.

The Meaning of "Foreign"

What appears to be a very simple notion, such as the separation of students into one of only two classifications (i.e., foreign or domestic), can, when placed in the hands of a social scientist or bureaucrat, become wonderfully complex. As noted above, for example, foreign students actually constitute not one category but two: temporary or permanent visa status. Second, to dismiss the obvious, unlike domestic students who are by definition residents of one country, the block of foreign students across graduate economics programs represents perhaps more than one hundred nations that vary with respect to cultural characteristics, the stage of development, and economic orientations.

What one means by foreign is a non-trivial matter. In the excellent volume published in 1980 by the Economics institute from papers presented at the 1980 Allied Social Science Association meetings in Denver,[8] all of the authors implicitly restrict their discussions to the teaching of students from underdeveloped (or developing or less-developed or

less-industrialized, or whatever euphemism one prefers for "poor") countries. That decision is unwise on both theoretical and empirical grounds.

In 1980 across all disciplines U.S. universities granted the highest number of foreign doctorates to students from Taiwan (470, or 9-1/2% of all doctorates to non-U.S. citizens), India (419, or 8-1/2%), and Canada (300, or 6%). Those countries were the top three both ten and twenty years ago as well, though their relative order has changed and, compared with 1970, their combined share has fallen from 40% of all foreign doctorates to 24%. The next seven highest country totals in order, each with over 100 Ph.D.'s, were: Iran, South Korea, Nigeria, Brazil, Thailand, England, and Egypt. (47% of all non-U.S. doctorate recipients were from these ten nations.) These countries--and their students--vary significantly by most criteria. To lump them into a category entitled "foreign" could blur important differences even within a particular discipline; to restrict the discussion to just selected areas (i.e., developing nations) is equally improper.

As a defensible generalization, one might easily treat United States graduate students in economics as a homogeneous entity: there's only one nation involved; the prior training is fairly uniform; and career goals seem to be (voluntarily) restricted to a small subset of alternatives. But that leap of faith cannot--and should not--be made with respect to foreign students in our departments. Although foreign enrollments in economics at Princeton, compared with the national figures above for all disciplines, are disproportionately weighted toward Canada and Europe and away from Africa and western Asia (see Table 1), these students are nevertheless drawn from a large number of rather heterogeneous nations, some of when have achieved high levels of economic development.

TABLE 1

Foreign Economics Enrollment at Princeton, 1982-83, by Geographic Area

Canada		9
Europe		13
United Kingdom	5	
Spain	2	
Ireland	1	
Switzerland	1	
Italy	1	
W. Germany	1	
Finland	1	
Netherlands	1	
Mexico, Central America, Carribean		0
South America		4
Brazil	3	
Colombia	1	
Africa		1
Zimbabwe	1	
India		5
Mediterranean		5
Israel	2	
Turkey	2	
Greece	1	
Pacific		4
Australia	4	
Eastern Asia		12
South Korea	8	
Japan	2	
China	1	
Thailand	1	

If the curricular wants of students from India do not coincide with those of South Koreans or Canadians, then it is hard to speak of "foreign students" without specifying which foreign students--and even harder to imagine constructing programs that would address the separate nationalistic concerns--if the international "coincidence of wants" is small. If, however, these cross-country concerns are small or the nature of economics is such that they can easily be accommodated or ignored (points to which we will return shortly), then we might actually lose precious little by lumping together not only all foreign students but also foreign and domestic students.

One further consideration is the career goals and expectations of the annual 200 or so US.-trained foreign economics Ph.D.'s, an issue to which we now turn.

Post Ph.D. Plans

Presumably what U.S. or foreign students want from a graduate economics program is not unrelated to their immediate and longer-run career plans. From information gathered annually from the Survey of Earned Doctorates, it appears that most economics Ph.D.'s--about 60%--are seeking employment in academic institutions, with government and industry being significant but distant second and third choices, respectively; only a small percentage (4%) give plans for post-doctoral study. Teaching and research are by far the main employment activities listed. For the last two years, about fifteen percent of doctorate recipients in economics indicated employment outside the United States (about twice the average of all Ph.D. fields, but less than half the percentage of economics degrees earned by foreigners).[9]

On the 1980 detailed Survey for non-U.S. doctorate recipients, employment plans of economics Ph.D.'s with permanent visas tended to mirror the field as a whole; for those on temporary visas a higher percent indicated academic employment (with government being the only other significant category) and over half listed a location outside the United States (though not necessarily in their country of origin).[10]

From a much more limited, but perhaps more reliable, data set the employment question is even more interesting. Placement information for the last four years gathered this fall from seven leading graduate departments (see Table 2) for all Ph.D.'s in economics--foreign and domestic--suggests that very few U.S.-trained foreign economists are leaving this country, at least initially. Only 8% of the Ph.D.'s from these schools, where foreign doctorates are probably over 30% of the total, were placed in positions directly outside this country, and 5% of the 8% went to Canada--most likely Canadian Ph.D.'s returning home. The preponderance of academic employment within the foreign placements is consistant with the aggregate data above; the foreign percentage itself, however, is clearly out of line. (There may well be some reporting bias on the formal national questionnaire, specifically foreign students indicating employment abroad when in fact they intend to remain in this country.)

A high percentage of our "output" in economics appears to be seeking and finding employment in U.S. educational institutions; this seems to true for young domestic and foreign economists. Canadians are generally returning home; but the same cannot be said for doctorate recipients from other lands. To the extent that this is the case, some of our uneasiness about not matching curricula with interests or the neglect of

TABLE 2

Initial Placements From Seven Leading Economics Ph.D. Programs[1] in the United States, 1978-79 Through 1981-82

	Number	(Percent)
United States Colleges and Universities	275	(72%)
Brookings, Rand, Federal Reserve System, or U.S. Government Agencies	37	(10%)
Other U.S. Non-Academic (DRI, Bell Labs NBER, Charles River Associates, The Urban Institute, etc.)	25	(7%)
International Monetary Fund or World Bank	13	(3%)
Foreign Colleges and Universities[2]	27	(7%)
Foreign Non-Academic[2]	5	(1%)
TOTAL:	382	

[1] MIT, Harvard, Yale, Chicago, Stanford, California-Berkeley, Princeton (not all schools for all years)

[2] 20 in Canada (18 in academic positions), 2 in United Kingdom (both academic), 3 in Israel, 1 each in Australia, West Germany, Japan, Belgium, South Korea, Pakistan, and Saudi Arabia

Source: Data supplied by each institution fall 1982 in Princeton's Graduate Student Club in Economics

heterogeneity among the foreign-student population may be unnecessary. On the other hand, perhaps we should be uneasy about what the data might be implying about the international tramsmission of knowledge, nationalistic concerns about brain drains, wealth inequalities across regions, and disparities in rates of economic growth.

The point of the above empirical exercises is that before one can say what foreign graduate students "want" or "need" from their advanced training, one must ask what they will be doing with it. Even for graduates who eventually return home, the advanced degree may serve more of a certification or credential than a research tool; what they learn here could be of far less importance than the basic point of possessing a degree, a factor foreign students at Princeton from underdeveloped countries have been known to admit in private. The direction our programs have gone and the level of rigor we advertise may be poorly suited to the professional requirements of many economists, here or abroad. These vexing and controversial issues, topics for the next section. go well beyond the foreign vs. domestic curriculum question--and perhaps beyond the discipline itself.

Economic Programs and Economics

Given an adequate dose of rationality, self-interest, and information on the part of participants, coupled--due to the number of suppliers and demanders in the market--with ineffective collusion, in the face of high and increasing enrollments of foreign students I am sorely tempted to conclude that U.S. graduate economics programs are meeting the "needs" of this particular clientele.

In the absence of a good match of wants with the product, I would expect to see students register their dissatisfaction with their feet and wallets. (There is not a perfectly controlled experiment, however, because the relative net cost to foreign students could be affected by institutional changes such as financial aid policies in this country or the British decision to charge tuition.) Or one might expect U.S. departments to attempt, via money and/or curricular changes (such as including more development or international courses, for example) to attract more foreign students. I have not observed significant movements on either front. (Without implying causation, it is interesting to note that the highly quantitative orientation of economics programs and in the professional literature is consistent with the relatively better quantitative preparation possessed by foreign students. However, we are also moving away from applied work, an area that one might feel would have more appeal for foreign students--although local evidence suggests that foreign students eschew applied areas, deeming them as "soft.")

For a discipline that recognizes incentives, market forces, and alternatives, it would seem unlikely that it would not be cognizant of, and take into consideration, the wants of its students--foreign and domestic--in shaping its programs. We are probably being led by an invisible hand and visible income expectations to engage in what we do best: presenting a common core of material that is independent of geographic location, industrial structure, political considerations, and so forth.

If we are not serving a distinct menu for our foreign students, one should not conger up notions of ignorance, neglect, or insensitivity on

our part. There may not be, first of all, an effective, homogeneous "foreign" voice; second, there may be enough flexibility in our programs to accommodate difference in tastes; third, one could argue that there is indeed no separate branch of economics devoted to underdeveloped areas; we are providing instruction in basic principles and research techniques that are independent of other factors.

The last twenty years have been very good to economics and economists. Supply and demand conditions have produced an expanding market and high relative incomes for the practitioners, though the supply response is now dampening the latter. The establishment of a Nobel Prize legitimized the field as a science. (And the distribution of the twenty awards over the fourteen years pointed clearly to where these scientists labor.)

Part of the success that the discipline has enjoyed over time is attributable to its development of, or reliance on, a small set of basic principles (such as opportunity cost, decision making at the margin, human capital formation, incentive structures, the role of markets, and so forth) and the hypothesized notion that one-size-fits-all in terms of these principles. Both Adam Smith and John Maynard Keynes offered models of wealth that were applicable across countries and over time. Economists have not succumbed to the temptation of treating "taste" or cultural variables, as many social scientists are wont to do, as important explanatory variables. In fact, the recent work of economic historian Douglass North and 1982 Novel laureate George Stigler is an attempt to understand and to treat institutional rules as endogenous.

Some of these points are perhaps expressed best by recent comments from 1979 Nobel laureate Theodore Schultz:

> "Development economics has suffered from several intellectual mistakes. The major error has been the presumption that standard economic theory is inadequate for understanding low-income countries and that a separate economic theory is needed.... Increasing numbers of economists have now come to realize that standard economic theory is as applicable to the scarcity problems that confront low-income countries as to the corresponding problems of high-income countries.
>
> "A second mistake is the neglect of economic history. Classical economics was developed when most people in Western Europe were barely scratching out subsistence from the poor soils they tilled and were condemned to a short life-span. As a result, early economists dealt with conditions similar to those prevailing in low-income countries today."[11]

Thus one may regard the study and application of the science of economics as independent of the characteristics of the apprentices or the setting in which the principles operate. By doing what we do best, we are at the same time fulfilling well the wants of foreigners as graduate students and young Ph.D. economists.

But also what some, including this author, may regard as serious problems with the field--such as highly abstract theoretical modeling, devotion to esoteric mathematical manipulations, and carrying specialization to its logical but potentially destructive conclusions--are also largely independent of the question of foreign students in our programs. As economists we have been wise, swift, and lucky up to this point. And the prize has been ours. But as a nation we face serious internal problems with technological change, investment, productivity, the role of the state;

externally we still seem to lack a basic understanding and appreciation of other cultures, people, and languages. It would be nice to think of economics more as a solution to rather than contributing to these problems. For the discipline and for the nation, these troubles may disappear like the Cheshire Cat; but it is also possible that someday soon what will be left for us to see is not a smile but a frown.

Endnotes

1. Paper delivered at the December, 1982 meetings of the Allied Social Science Association in New York.

2. Assistant Dean of the Graduate School and Lecturer in Economics, Princeton University.

3. The Graduate School Announcement, 1959-60, Princeton University, Princeton, New Jersey, 1960, p. 84.

4. Princeton University Graduate School Announcement, 1981-82, Princeton University, Princeton, New Jersey, p. 103.

5. Wyn F. Lwen and Larry R. Cross (eds.), Guide to Graduate Study in Economics and Agricultural Economics, sixth edition, Economics Institute, Boulder, Colorado, 1982.

6. Summary Report, 1980 Doctorate Recipients from United States Universities, National Research Council, 1981, pp. 8-9.

7. Ibid., pp. 4-15.

8. Wyn F. Owen, Gustav F. Papanek, Gustav Ranis, G. Edward Schuh, and James S. Worley, Higher Education in Economics: The International Dimensions, Economics Institute, Boulder, Colorado, 1981.

9. Summary Report, Doctorate Recipients from United States Universities, National Resource Council, 1981, pp. 30-31.

10. Ibid., pp. 19-21.

11. Theodore W. Schultz, Investing in People, The Economics of Population Quality, University of California Press, Berkeley, 1982, pp. 4-5.